



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,098	01/07/2004	Hiroaki Segawa	U 014974-9	3931
140	7590	11/16/2006	EXAMINER SHOSHO, CALLIE E	
LADAS & PARRY 26 WEST 61ST STREET NEW YORK, NY 10023			ART UNIT 1714	PAPER NUMBER
DATE MAILED: 11/16/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/753,098

Applicant(s)

SEGAWA, HIROAKI

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. All outstanding rejections except for those described below are overcome by applicant's amendment filed 8/28/06.

It is noted that applicants filing on 8/28/06 of English translation of certified foreign priority document filed 4/28/04 perfects the foreign priority filing date. Further, applicants' proper statement of common ownership regarding Kubota et al. (U.S. 6,824,262) is acknowledged.

In light of the new grounds of rejection set forth below, the following action is non-final.

**Claim Rejections - 35 USC § 103**

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1, 3, and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. (U.S. 6,399,674).

The rejection is adequately set forth in paragraph 10 of the office action mailed 3/24/06 and is incorporated here by reference.

With respect to newly added claim 10, it is noted that Kashiwazaki et al. disclose ink set comprising yellow, magenta, and cyan inks as well as ink comprising Pigment Violet 23, i.e. violet ink (col.1, lines 6-10 and 5, lines 16-19 and 25).

Art Unit: 1714

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. as applied to claims 1, 3, and 5-10 above, and further in view of Sekioka et al. (U.S. 6,030,440).

The rejection is adequately set forth in paragraph 11 of the office action mailed 3/24/06 and is incorporated here by reference.

5. Claims 1, 3, and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erdtmann et al. (U.S. 6,152,999) in view of Suga et al. (U.S. 5,172,133).

Erdtmann et al. disclose ink set comprising cyan, magenta, yellow, and violet inks wherein the violet ink comprises water, organic solvent, Pigment Violet 23, and dispersant that is styrene-acrylic copolymer. It is further disclosed that the ratio of pigment to dispersant is 20:1 to 1:2. There is also method wherein ink is ejected from printer onto substrate to form recorded matter (col.1, lines 4-5, col.1, line 66-col.2, line 7, col.2, lines 53-54, col.4, lines 37 and 40-45, and col.6, lines 24-47). For specific types of dispersant, Erdtmann et al. refers to U.S. 5,172,133 (Suga et al.) which discloses styrene-acrylic resin with acid number between 50-250 (see examples) as presently claimed.

Attention is drawn to example 16 of Erdtmann et al. that discloses violet ink comprising water, organic solvent, Pigment Violet 23, and dispersant, i.e. oleoyl methyl taurine (OMT). It is calculated that the amount of dispersant present based on the amount of pigment is approximately 35% (10.5/30) and that the Pigment Violet 23 is present in amount of approximately 2.3% (1.12/50). Although there is no disclosure that this violet ink comprises styrene-acrylic resin dispersant as presently claimed, it is noted that col.4, lines 40-48 of

Art Unit: 1714

Erdtmann et al. disclose the equivalence and interchangeability of using oleoyl methyl taurine dispersant with using styrene-acrylic resin dispersant as presently claimed

In light of the disclosure of Erdtmann et al. of the equivalence and interchangeability of using oleoyl methyl taurine dispersant with using styrene-acrylic resin dispersant, it therefore would have been obvious to one of ordinary skill in the art to use styrene-acrylic resin dispersant as the dispersant in the ink of example 16 of Erdtmann et al., and thereby arrive at the claimed invention.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erdtmann et al. in view of Suga et al. as applied to claims 1, 3, and 5-10 above, and further in view of Sekioka et al. (U.S. 6,030,440).

The difference between Erdtmann et al. in view of Suga et al. and the present claimed invention is the requirement in the claim of the average particle diameter of the pigment.

Sekioka et al., which is drawn to ink jet inks, disclose the use of pigment possessing average particle diameter not larger than 50 nm in order to produce stable ink that does not clog printer nozzles (col.4, lines 25-41).

In light of the motivation for using pigment with average particle diameter less than 50 nm disclosed by Sekioka et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use pigment with such average particle diameter in the ink of Erdtmann et al. order to produce stable ink that does not clog printer nozzles, and thereby arrive at the claimed invention.

Art Unit: 1714

7. Claims 1, 3, and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/100959 in view of either Nakamura et al. (U.S. 6,114,411) or EP 892024.

Attention is drawn to col.13, lines 44-50 and col.14, lines 29-38 of WO 02/100959<sup>1</sup> that discloses ink set comprising yellow ink, magenta ink, cyan ink, and violet ink wherein the violet ink comprises water, organic solvent, 2 wt.% Pigment Violet 23, and 0.7 wt.% water-soluble styrene-acrylic acid dispersant. Thus, it is clear that dispersant is present in amount of 35% of the pigment (0.7/2). There is also method wherein ink is ejected from printer onto substrate to form recorded matter (col.11, lines 6-11).

The difference between WO 02/100959 and the present claimed invention is the requirement in the claims of the acid value of the dispersant.

Nakamura et al., which is drawn to ink jet ink, disclose the use of dispersant including styrene-acrylic resin wherein the dispersant has acid value of 100-250 in order to produce ink with good storage stability (col.4, lines 32-41).

Alternatively, EP 892024, which is drawn to ink jet ink, disclose the use of dispersant including that obtained from styrene and acrylic acid wherein the dispersant has acid value of 100-250 in order to produce better image with high color density while preventing color bleed (page 3, lines 43-46 and 51-55).

In light of the motivation for using dispersant with specific acid value disclosed by Nakamura et al. or EP 832024 as described above, it therefore would have been obvious to one of ordinary skill in the art to use dispersant with such acid value in WO 02/100959 in order to

---

<sup>1</sup> It is noted that when utilizing WO 02/100959, the disclosures of the reference are based on Kataoka et al. (U.S. 6,843,840) which is an English language equivalent of the reference. Therefore, the column and line numbers cited with respect to WO 02/100959 are found in Kataoka et al.

Art Unit: 1714

produce ink with good storage stability or, alternatively, to produce ink that produces better images with high color density while preventing color bleed, and thereby arrive at the claimed invention.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/100959 in view of either Nakamura et al. or EP 892024 as applied to claims 1, 3, and 5-10 above, and further in view of Sekioka et al. (U.S. 6,030,440).

The difference between WO 02/100959 in view of either Nakamura et al. or EP 892024 and the present claimed invention is the requirement in the claim of the average particle diameter of the pigment.

Sekioka et al., which is drawn to ink jet inks, disclose the use of pigment possessing average particle diameter not larger than 50 nm in order to produce stable ink that does not clog printer nozzles (col.4, lines 25-41).

In light of the motivation for using pigment with average particle diameter less than 50 nm disclosed by Sekioka et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use pigment with such average particle diameter in the ink of WO 02/100959 order to produce stable ink that does not clog printer nozzles, and thereby arrive at the claimed invention.

**Response to Arguments**

9. Applicant's arguments regarding Kubota (U.S. 2005/0075449), Redfearn et al. (U.S. 6,958,090), and Kubota et al. (U.S. 6,824,262) have been considered but they are moot in view of the discontinuation of the use of these references against the present claims.

10. Applicant's arguments filed 8/28/06 have been fully considered but with the exception of arguments relating to Kubota, Redfearn et al., and Kubota et al., they are not persuasive.

Specifically, applicant argues that Kashiwazaki et al. is not a relevant reference against the present claims in light of the comparative data set forth in the present specification which establishes the criticality of using the presently claimed amount of the dispersant.

It is noted that the data compares violet ink within the scope of the present claims, i.e. utilizing dispersant that is present in amount of 30, 60, or 80% of the amount of pigment, with violet ink outside the scope of the present claims, i.e. utilizing dispersant that is present in amount of 20-100% of the amount of pigment. It is shown that the violet ink of the present invention is superior in terms of gas fastness and bronzing fastness or glossiness.

However, it is the examiner's position that the data is not persuasive given that Kashiwazaki et al. already recognize the criticality of using dispersant that is present in amount of 30% of the amount of pigment. Kashiwazaki et al. explicitly disclose using ratio of pigment to dispersant of 10:3, i.e. amount of dispersant is 30% that of the pigment. While the overlap between the claimed amount of dispersant and that disclosed by Kashiwazaki et al. is only at one point, i.e. 30%, the fact remains that there is overlap.

Applicant argues that the preferred embodiment exemplified in Kashiwazaki et al. teaches amount of dispersant outside the scope of the claimed range.



However, “applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others”, *In re Courtright*, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967). Further, “nonpreferred disclosures can be used. A nonpreferred portion of a reference disclosure is just as significant as the preferred portion in assessing the patentability of claims”, *In re Nehrenberg*, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). As set forth above, a fair reading of Kashiwazaki et al. as a whole discloses amount of dispersant as presently claimed.

Applicant also argues that Kashiwazaki et al. is not a proper reference against the present claims given that there is no disclosure of ink comprising the claimed combination of colorant, dispersant, acid value, and amount of dispersant as required in all the present claims. Applicant argues that in order to arrive at the claimed invention, one must choose the presently claimed pigment from large number of colorants, choose the presently claimed dispersant from large number of resins, and that the acid number and amount of dispersant disclosed by Kashiwazaki et al. only overlap that presently claimed.

However, while Kashiwazaki et al. disclose colorant and dispersant other than the presently claimed Pigment Violet 23 and styrene-(meth)acrylic resin, the fact remains that Kashiwazaki et al. do explicitly disclose the use of Pigment Violet 23 and styrene-(meth)acrylic resin as presently claimed.

Further, with respect to the colorant, it is noted that col.5, lines 16-30 of Kashiwazaki et al. disclose that pigments including Pigment Violet 23 are used when colors other than the three primary colors are required. Thus, it therefore would have been obvious to one of ordinary skill

Art Unit: 1714

in the art to choose colorant, including Pigment Violet 23 as presently claimed, depending on the desired color of the ink.

With respect to the dispersant, it is further noted that in the examples of Kashiwazaki et al., all the color inks (magenta, cyan, red, green, yellow, and blue) utilize styrene-(meth)acrylic resin and thus, it therefore would have been obvious to one of ordinary skill in the art to utilize such dispersant when other color inks, including violet ink, are utilized in Kashiwazaki et al.

With respect to the acid number, as set forth in MPEP 2144.05, in the case where the claimed range “overlap or lie inside ranges disclosed by the prior art”, a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Thus, it would have been obvious to one of ordinary skill in the art to use dispersant with acid value, including that presently claimed, and thereby arrive at the claimed invention.

With respect to the amount of dispersant, given that Kashiwazaki et al. explicitly disclose amount of dispersant that overlaps that presently claimed, i.e. ratio of pigment to dispersant of 10:3 or amount of dispersant is 30% that of the pigment, it is the examiner's position that Kashiwazaki et al. meet the requirements of the present claims with respect to the amount of dispersant.

Thus, while Kashiwazaki et al. fails to exemplify the presently claimed ink nor can the claimed ink be “clearly envisaged” from Kashiwazaki et al. as required to meet the standard of anticipation (cf. MPEP 2131.03), nevertheless, in light of the overlap between the claimed ink and the ink disclosed by Kashiwazaki et al., it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use ink

Art Unit: 1714

which is both disclosed by Kashiwazaki et al. and encompassed within the scope of the present claims and thereby arrive at the claimed invention.

Applicant argues, and the examiner agrees, that Kataoka et al. is not a proper reference against the present claims under any subsection of 35 USC 102 given the effective filing date of the reference. This is why claims 1, 3, and 5-10 as well as claim 4 are now rejected utilizing WO 02/100959 which is the foreign language equivalent of Kataoka et al. and which, given its publication date of 12/19/02, is a proper reference against the present claims. In light of this, applicant's arguments regarding Kataoka et al. are applied to WO 02/100959.

Specifically, applicant argues that WO 02/100959 is not a relevant reference against the present claims given that there is no disclosure in WO 02/100959 of the acid number of the dispersant.

It is agreed that there is no disclosure in WO 02/100959 of the acid number of the dispersant which is why WO 02/100959 is used in combination with Nakamura et al. or EP 892024 which are both drawn to ink jet inks and which both teach the use of dispersant with acid number as presently claimed.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Koyano et al. (U.S. 7,033,013) disclose ink comprising Pigment Violet 23 and dispersant, however, there is no disclosure of the acid number of the dispersant. Further, the disclosure of the amount of dispersant present in terms of the amount of pigment is very broad compared to

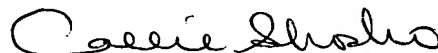
Art Unit: 1714

that presently claimed which is significant in light of the comparative set forth in the present specification that establishes criticality of the presently claimed amount of dispersant.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714